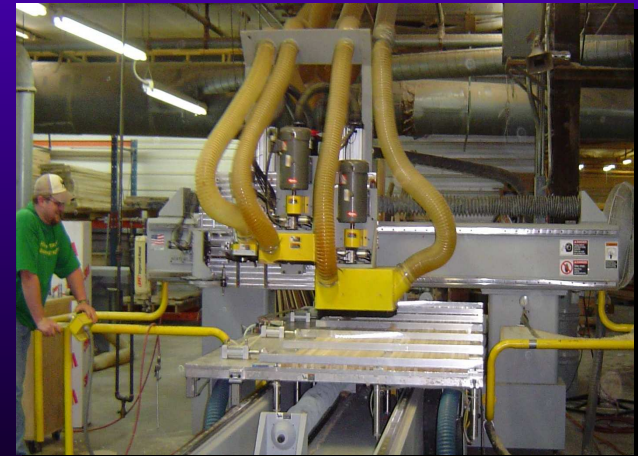
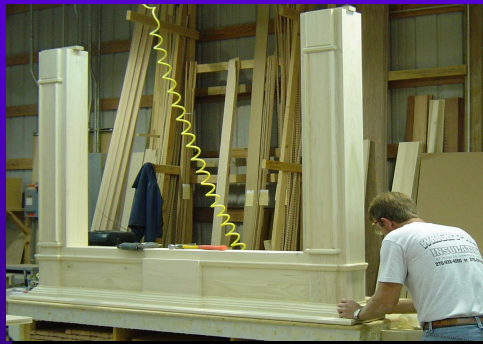


**Overview of a Privately  
Owned Biomass  
Co-Generation Project  
at  
Cox Interior, Inc.**

Founded in 1983 by Charles Cox and his family.  
Manufacturers of quality interior and exterior  
finishing products for the homebuilder.



# Millwork Operations





# Specialty Products



Cox Interior experienced drastic growth over the past 25 years. Facility is located on 105 acres with 20 acres of manufacturing under roof.





**One of the largest secondary wood manufacturers  
in Kentucky and ranked in the top 100 in the U.S.**

**2008 Annual Sales  
over \$77million.**



**Produces over 100 tons per day of wood waste**



In the early 90's, Cox Interior began the search for an alternative to their wood waste disposal and looked into the following options:

- **Mulch**
- **Fireplace Logs**
- **Wood Fuel Pellets**
- **Charcoal**
- **Co-Generation**



**After careful consideration of Cox Interior's needs:**

- **Large Quantity of Wood Waste for Disposal**
- **Large Steam Demand and Increasing**
- **Increasing Building Heat Requirements**
- **Increasing Electricity Demands**

**The obvious choice was:**

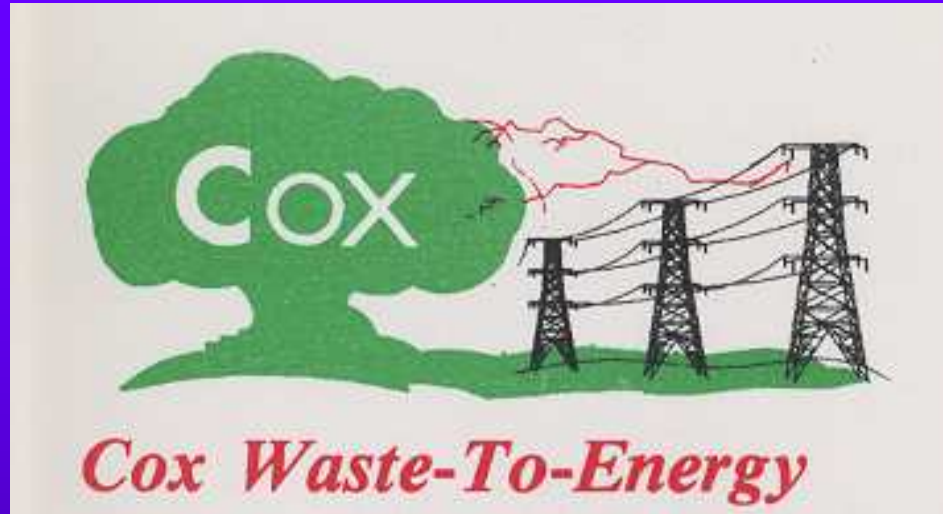
## **Biomass Co-Generation**

**Using a renewable energy source (*wood waste*)  
for the simultaneous production of electric power  
and other useful thermal energy for an industrial  
process, heating/cooling, or steam sales.**

Purchased Co-Generation Plant in 1992  
and began limited operations in 1994.







- **Twin, 61.4 million Btu/hour boilers**
- **Combust over 300 tons per day of wood waste**
- **Produce 1.7 million pounds of steam per hour**
- **Generate 5 megawatts of electricity per hour**

# CARBON OFFSETS

- **5 MW Power Plant can generate enough electricity to supply over 3,600 homes.**
- **Biomass electric generation is carbon cycle neutral; therefore does not add to the atmospheric concentrations of CO<sub>2</sub>.**
- **Cox Waste-To-Energy could offset over 44,000 tons per year of CO<sub>2</sub> that would be generated by a coal-fired power plant.**

# **Cox Waste-To-Energy**

- **1<sup>st</sup> Small Power Producer in Kentucky to sign a contract with East Kentucky Power.**
- **Have been selling electricity for over 15 yrs.**
- **Over 26 million kWh sold.**



# Plant Priorities

- Provide all the steam necessary to the dry kilns
- Provide manufacturing plant heat
- Make electricity for the manufacturing plant
- Make the least amount of electricity to sell

# **2008 Annual Electric Savings**

- **Annual Electric Production – 17 million kWh**
- **85% of Electricity produced is used in-house**
- **Annual electric savings of over \$1.1 million**
- **Annual electricity sales to EKPC only \$73,500**

## Maximize Value of Fuel

- 2008 purchased 2,800 loads of fuel @ \$715,000.  
(Average of \$250 per load or \$15 to \$20 per ton.)
- Cost to produce one kWh is well over \$0.06.
- EKPC pays an average of \$0.032 per kWh.



## **UNDER-UTILIZATION OF BIOMASS POWER PLANT CAPACITY**

- **2008 - Excess electricity production was  
enough to power 194 homes.  
(2,390 tons of CO2 avoided)**
- **Capacity to supply an additional 280 homes.  
(3,450 tons of CO2 avoided)**

# **ELIGIBLE INCENTIVE PROGRAMS**

## **■ BIOMASS CROP ASSISTANCE PROGRAM**

**BCAP** is a USDA matching payment program for the collection, harvest, storage, and transportation (CHST) of eligible biomass to a qualified biomass conversion facility.

- Cox Interior has applied for status as a Qualified Biomass Conversion Facility.**